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# DDAS Accident Report

## Accident details

<b>Report date:</b> 10/04/2019	<b>Accident number:</b> 817
<b>Accident time:</b> 07:30	<b>Accident Date:</b> 13/01/2017
<b>Where it occurred:</b> Bahuy Khmer Cheung village, Bar Yakha commune, Pailin Province (Thai border)	<b>Country:</b> Cambodia
<b>Primary cause:</b> Management/control inadequacy (?)	<b>Secondary cause:</b> Field control inadequacy (?)
<b>Class:</b> Vegetation removal accident	<b>Date of main report:</b> 13/01/2017
<b>ID original source:</b>	<b>Name of source:</b> Press
<b>Organisation:</b> [Name removed]	<b>Ground condition:</b> dense vegetation; trees; woodland
<b>Mine/device:</b> PMN-2 AP blast	<b>Date last modified:</b> 10/04/2019
<b>Date record created:</b>	<b>No of documents:</b> 1
<b>No of victims:</b> 2	

## Map details

<b>Longitude:</b>	<b>Latitude:</b>
<b>Alt. coord. system:</b> Not recorded	<b>Coordinates fixed by:</b>

## Accident Notes

inadequate investigation (?)

no independent investigation available (?)

safety distances ignored (?)

inadequate training (?)

PPE not used

visor not worn or worn raised (?)

## Accident report

This accident was reported in the press. The press reports are reproduced below, edited for anonymity. Text in square brackets [ ] is editorial.

<https://www.cambodiadaily.com/news/deminer-killed-explosive-pailin-123449/>

Deminer Killed by Explosive in Pailin, January 13, 2017

A deminer from the NGO [International demining organisation] was killed in Pailin province on Friday after detonating a mine while attempting to clear an area in the former Khmer Rouge stronghold, police and the NGO said.



[The picture shows Victim No.1, deceased, after his body armour was removed and a towel has been placed over his head.]

[Victim No.1], aged 55, died almost instantly around 7:30 a.m. in a forested area in Bar Yakha commune's Ba Huy Choeung village on the Thai border, [International demining organisation] country director [name removed] said.

"Initial findings indicate that [Victim No.1] and his colleague were preparing a lane ahead of clearance and initiated an anti personnel mine with a vegetation clearing tool," [name removed] said in an email.

"Fragmentation bypassed his protective equipment and caused severe injury to his head which led to his death seconds after the accident," he said.

[Victim No.1] had worked with the NGO since 2003, he said.

Another [International demining organisation] worker suffered minor injuries in the blast and was flown to Battambang Provincial Hospital for treatment, he said, adding that she is expected to be released in the coming days.

An investigation has already been launched with the Cambodian Mine Action Authority and the results would be released once it has concluded, he said.

The death comes less than nine months since [International demining organisation] lost another worker in Pursat province's infamous K-5 minefield in April. An investigation by the NGO revealed that he was using the wrong equipment while clearing an area.

<http://www.safetravelsmagazine.com/2017/01/20/cambodia-landmine-kills-deminer-injures-another-in-pailin/>

Cambodia: Landmine kills [International demining organisation] deminer, injures another in Pailin

January 20, 2017

Last Friday a man was killed and another injured as they worked to removed landmines in Pailin, Cambodia. The pair were working for the [International demining organisation] and it is believed the landmine was triggered as they cleared vegetation.

From [Cambodia Daily](#)

One Deminer Killed, Another Injured by Landmine in Pailin

“Initial findings indicate that [Victim No.1] and his colleague were preparing a lane ahead of clearance and initiated an anti-personnel mine with a vegetation clearing tool,” the [International demining organisation] country director [name removed] said in an email on Friday.

“Fragmentation bypassed his protective equipment and caused severe injury to his head which led to his death seconds after the accident.” The hilly and forested area prevented the deminers from using “mechanical clearance assets,” he added.

### One Deminer Killed, Another Injured by Landmine in Pailin

January 16, 2017

A deminer working for the NGO [International demining organisation] was killed and another was injured in Pailin province on Friday after they detonated a mine while attempting to clear an area in the former Khmer Rouge stronghold, the NGO said.

Staff from the NGO and the government’s Cambodian Mine Action Authority visited the area on Sunday as part of a joint investigation into the death of [Victim No.1], 55, who was killed almost instantly at about 7:30 a.m. in Bar Yakha commune on the Thai border, said [International demining organisation] country director [name removed].



[The picture shows the medic with Victim No.1’s body armour. She is walking up a forested slope with dense undergrowth, typical in that area.]

“Initial findings indicate that [Victim No.1] and his colleague were preparing a lane ahead of clearance and initiated an anti-personnel mine with a vegetation clearing tool,” [name removed] said in an email on Friday.

“Fragmentation bypassed his protective equipment and caused severe injury to his head which led to his death seconds after the accident.” The hilly and forested area prevented the deminers from using “mechanical clearance assets,” he added.

[International demining organisation] country director did not respond on Sunday to questions about the tools that were used by the deminers or how fragments bypassed [Victim No.1]’s protective gear.

The other deminer, named by police as [Victim No.2], remained hospitalized with non-life-threatening injuries, including corneal abrasion, [International demining organisation] country director [name removed] said.

"She received some slight damage to her eyes," he said. "We expect her to be released before the end of next week."

The deceased had worked with [the International demining organisation] since 2003, he said.

Another [same International demining organisation] worker was killed in April in Pursat province's notorious K-5 minefield. The NGO said at the time that the 36-year-old deminer had been using the "wrong tool" while clearing the land for houses and farms.

<https://cambodiaexpatonline.com/newsworthy/-deminer-killed-near-pailin-city-t12400.html>

[International demining organisation] deminer killed, another seriously injured

One [International demining organisation] deminer was killed this morning on the outskirts of Pailin city and another seriously injured when a mine they were trying to clear exploded suddenly. Pailin provincial police identified the dead deminer as 55-year-old [Victim No.1]. According to Pailin police, the seriously injured deminer was [Victim No.2], a 28-year-old female.

Police first lieutenant [name removed], posting on the official Facebook page of Pailin provincial police, said the explosion happened in Bahuy Khmer Cheung village in Bar Yakha commune on the outskirts of Pailin city.

According to [name removed], [Victim No.1] was killed on the spot. [Victim No.2], he said, is undergoing emergency medical treatment in Phnom Penh after being airlifted from Pailin by helicopter.

[Name removed] said in the Facebook post that the explosion was caused by a Gyata-64 mine, which the deminers failed to detonate [sic].

<https://www.khmertimeskh.com/8242/-deminer-killed-another-seriously-injured/>

Picture: [International demining organisation] deminers trying to move their colleague. [This picture has been used above in two parts.]

One [International demining organisation] deminer was killed this morning on the outskirts of Pailin city and another seriously injured when a mine they were trying to clear exploded suddenly.

Pailin provincial police identified the dead deminer as 55-year-old [Victim No.1]. According to Pailin police, the seriously injured deminer was [Victim No.2], a 28-year-old female.

Police first lieutenant [name removed] said on Facebook that [Victim No.1]'s body was still in the Pailin office of [International demining organisation], for his family to claim it.

<https://www.phnompenhpost.com/national/deminer-killed-explosion>

Photo: A deminer was taken into emergency treatment after an accident during demining

One employee of the British demining organisation [name removed] died and another was injured after an antipersonnel mine exploded while they were working in Pailin province on Friday, the organisation confirmed.

[Victim No.1], 54, died immediately after a Russian-made PMN2 antipersonnel mine exploded as he and his assistant were attempting to remove it from the ground, said [name removed], a Cambodian Mine Action Centre (CMAC) official in Pailin province. His technical assistant, [Victim No.2], 28, was seriously injured and sent via helicopter to a hospital in Battambang province.

“[Victim No.2] was injured on her face and body, but the doctor at the emergency hospital successfully operated [on her] and rescued her life,” [the CMAC official] said.

[International demining organisation] representatives said [Victim No.1] was an experienced deminer who had been working with the organisation since 2003.. “Initial findings indicate that [Victim No.1] and his colleague were preparing a lane ahead of clearance and initiated an anti-personnel mine.”



[The picture shows Victim no.2, a “deminer [who] was taken into emergency treatment after an accident during demining”.

[Name removed], Pailin provincial police chief, said “On Saturday, Cambodian Red Cross agents visited the hospital and offered [Victim No.2] food and monetary assistance”.

## Victim Report

**Victim number:** 1029

**Name:** [Name removed]

**Age:** 55

**Gender:** Male

**Status:** deminer

**Fit for work:** DECEASED

**Compensation:** Not made available

**Time to hospital:** not recorded

**Protection issued:** Frontal apron; Long visor

**Protection used:** Frontal apron

**Summary of injuries:** severe Head; FATAL

COMMENT: Victim died 'seconds after the accident'. No Medical report was made available.

## Victim Report

<b>Victim number:</b> 1030	<b>Name:</b> [Name removed]
<b>Age:</b> 28	<b>Gender:</b> Female
<b>Status:</b> deminer	<b>Fit for work:</b> not known
<b>Compensation:</b> Not made available	<b>Time to hospital:</b>
<b>Protection issued:</b> Frontal apron; Long visor	<b>Protection used:</b> Frontal apron

**Summary of injuries:** severe Body; severe Eyes

COMMENT: No medical report was made available. emergency medical treatment in Phnom Penh after being airlifted from Pailin by helicopter. The organisation's manager stated that she had "corneal abrasions" and that he expected "her to be released before the end of next week". [The Victim] was injured on her face and body, but the doctor at the emergency hospital successfully operated [on her].

## Analysis

It is normal to cut undergrowth in front of the base-stick before searching that small area of ground and clearing any hazards found. The base-stick is then moved forward and undergrowth cut again. It is not clear whether another way of cutting undergrowth was being used.

The anti-personnel blast mine in this accident was reported as having been a GYATA-64 and as having been a PMN-2. The source reporting it as a PMN-2 was the Cambodian Mine Action Centre so that identification is accepted, especially as the mine is very common there.

Blast mines have no deliberate fragmentation element and the PMN-2 contains only 100g of TNT. <http://explosivehazards/minesPMN2.htm> The GYATA-64 contains approximately 300g TN, so would have made a larger blast.

The only accident records in which an anti-personnel blast mine has killed a deminer with fragments occurred when inappropriate hand-tools fragmented and struck the deminer.

The PMN-2 mine has a plastic case and explosive in only one side, so the other side can become burning plastic fragments. These have little mass and do not travel far but can inflict burning wounds. Either the Victims had their faces very close to the blast, the hand tool being used became fragments, or there was another source of fragmentation.

Blast from an anti-personnel blast mine is readily stopped by the 5mm polycarbonate demining blast visor at 60cms (and generally at 30cms). If the visor is worn in a down position, it cannot be simply "bypassed" in the way reported.

Victim No.2's facial injuries shown indicate that either she was not wearing a visor or that the visor was raised. That Victim No.2 also suffered body injuries implies that she either was not wearing her body armour or that it was too small to provide appropriate protection.

Victim No.1's head is concealed in the photograph but his hands are shown and appear to be uninjured. This implies that he was using a long tool of some kind that may have broken up and caused his injuries. That he suffered a fatal fragmentation injury to his head from a small



blast mine indicates that his blast visor was not worn, or not worn correctly, and (in the absence of other information) implies that his hand tool caused his injury.

The primary cause of this accident is listed as a 'Management control inadequacy' because the Victims were working without wearing their PPE correctly and this was not immediately acknowledged, so implies that it may not have been recognised. It possible that tools and PPE provided were also unsafe. The secondary cause is listed as a 'Field control inadequacy' because the Victims' supervisor should have prevented the Victims raising their visors and working close together in a hazardous area.

This demining organisation's body armour is shorter than most and usually does not have a collar to interface with the visor and prevent blast entering beneath the visor. However, in this accident the photograph shows one deminer wearing armour has been fitted with a collar to interface with the visor (which is a welcome improvement) but only on two of the four armours shown.

